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NATURAL DISASTER REDUCTION: INTERRELATIONSHIPS BETWEEN TECHNOLOGICAL AND NATURAL HAZARDS

Technical session

Addendum

INTERRELATIONSHIPS BETWEEN TECHNOLOGICAL AND NATURAL HAZARDS

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1. The interrelationships between natural and technological hazards and disasters do not receive enough attention. In the past few years, a large part of the workload of my office has been generated by major natural disasters. As we enter the next decade and the next century, it is essential to think about and plan to deal with the combined natural and technological disasters.

2. Major natural disasters often produce technological hazards and negative environmental impacts. In the United States of America three recent, major natural disasters - hurricane "Andrew" in Florida (1992), the Mid-West floods of 1993, and the Northridge (California) earthquake of 1994 - have highlighted the increasing interrelationships between natural and man-made

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disasters. Further, these recent events caused environmental impacts and technological hazards that were greater in number and importance than had been experienced before. Such impacts made both the response and recovery activities to major natural disasters more complex and protracted.

3. In general, almost every natural disaster is accompanied by some sort of technological disaster that has the potential to significantly aggravate the response. To date, the United States of America has been fortunate in that it has yet to be the victim of a natural disaster creating a catastrophic technology calamity; however, low-impact events are common. The prospect for great danger remains, partly because preparations that recognize the complications inherent in such combined events typically are not adequate.

4. Many of the United States experiences are typical of what has been observed throughout the world, according to a recent report of the United Nations Environment Programme (UNEP) on two decades of environmental challenges. Several researchers have acknowledged that the ever-increasing industrialization of the world, as well as the quickening pace of urbanization, will add to the quantitative increase and qualitatively worsening of disasters of the coming century. Another contributor to environmental hazards in the future is chemical hazards. Even localities in the past which had few or no risks from natural disasters are now vulnerable if they have any roads or navigable waterways in the vicinity of toxic chemical accidents or emergencies. In short almost any inhabited areas of society are now vulnerable to disasters from hazardous chemicals even when there are no manufacturing, storage or use facilities in the vicinity. While not all developed societies or communities are subject to major natural hazard threats from within, almost all are now increasingly subject to risk as dangerous chemicals in growing numbers are moved around more frequently.

5. In the near future, the world probably will face more and worse disasters as a consequence of increased technological dependence, urbanization and social complexity. Nevertheless, some positive international efforts are being made and new organizations formed to deal with risk assessment and management, such as those undertaken by the Organisation for Economic Cooperation and Development and by UNEP, one product of which is the programme known as APELL (Awareness and Preparedness for Emergencies at the Local Level). Since industrialization and urbanization will continue, the only questions are about how those processes can be modified or channelled to reduce the current negative effects. Some suggestions are offered to Governments of developing countries.